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THE ORGANIZATION OF IRRIGATION COMPANIES.

WHILE the laws of the several arid states determine, to some extent, the privileges of water users in those states, the great majority of farmers are also subject to additional conditions prescribed by the contracts under which they receive water, or by the articles of incorporation and the rules of the companies in which they are shareholders. The number of farmers who own their own ditches and take water direct from streams, subject to no conditions but those imposed by the laws and by nature, is so small that it can be neglected. The forms of organizations and the conditions prescribed by them are almost wholly independent of irrigation laws, but have fully as much influence on the development of an arid region as the laws, or perhaps more, and have a much more direct relation to the everyday affairs of the farmer. The farmer who uses water for irrigation is no more independent in this regard than the resident of a city who uses water for domestic purposes. The latter is much more directly affected by the rules of the water company than he is by the law under which the company is organized. Just so the farmer is much more directly affected by the rules of his company than by the water laws of his state.

While there is great variation in the forms of irrigation companies, they may be divided into six general classes, as follows:

1. The companies which sell perpetual water rights.
2. Companies which sell water rights, with a provision for turning the canal over to the water-right holders when a certain number have been sold.
3. Companies which sell water.
4. Co-operative companies.
5. Irrigation districts.
6. Colonization companies.

I. COMPANIES SELLING PERPETUAL WATER RIGHTS.

The manner of disposing of water is the distinctive feature of this class of companies, rather than the form of their organization; in fact, individuals and partnerships have followed this plan, as well as companies. It is an investor's plan, in no way fitted for co-operative enterprises. In general, the plan is to build irrigation works, or at least plan them, then sell perpetual rights to water from these works, for enough to repay the money put into them and a profit on the investment, and levy in addition to this purchase price an annual charge for the expenses of operation and maintenance, and in many cases interest on the investment, although the purchase price has more than repaid the original outlay.

The relations between the company and the farmers are defined by the contracts under which rights are sold, and although there is no necessary similarity in such contracts, there is a remarkable agreement in those used throughout the West.

A company agrees to furnish a fixed volume of water during the irrigating season, which is defined in the contracts, and to keep the works in good order for the delivery of the water. The farmer on his part agrees to pay the purchase price, usually in several instalments, and the annual assessments for maintenance, repairs, and operation; to use the water on a tract of land described in the contract, and no other; to permit no water to run to waste, and to notify the company whenever the water is not needed, so that it may be shut off; and to grant to the company a right of way over his lands for ditches.

The important part of these contracts is not, however, what each party agrees to do, but the penalties for the failure of either

party to do what has been agreed upon. The following paragraph, taken from the contract of a Colorado company, is typical, and is in substance included in all contracts of this character :

It is hereby distinctly understood and agreed that in case the canal shall be unable to carry and distribute a volume of water equal to its estimated capacity, either from casual or unforeseen or unavoidable accidents, or if the volume of water in the natural stream prove insufficient from drouth, or the use thereof by those having prior rights thereto, to the said party of the first part or from any cause beyond the control of the party of the first part, then said party of the first part shall not be liable in any way for the shortage or deficiency of the supply occasioned by any of said causes. If, by reason of such causes, the supply of water be insufficient to furnish an amount equal to all the water rights then outstanding, the said party of the first part shall have the right to distribute such water as may flow through said canal to the holders of such water rights, pro rata, and for the purpose of so doing may establish and enforce such rules as it may deem necessary and expedient.

That is, if the company fails to furnish the water which it has agreed to deliver, it is in no way liable. On the other hand, should the farmer fail to make his payments, he loses all he has put in, as provided in the contract of another Colorado company :

And the said party of the second part, in consideration of the premises, hereby agrees to make punctual payment of the above-named sums, as each of the sums respectively become due, together with the annual assessment hereinbefore stated.

And it is hereby agreed and covenanted by the parties hereto that time and punctuality are material and essential ingredients of this contract. And in case the second party shall fail to make the payments aforesaid, and each of them, punctually and upon the strict terms and times above limited, and likewise to perform and complete all and each of said agreements and stipulations aforesaid, strictly and literally, without any failure or default, then this contract, so far as it may bind the said first party, shall become utterly null and void, and all rights and interests hereby created or then existing in favor of the second party, or derived from said second party, shall utterly cease and determine, and all equitable and legal interest in the water rights hereby contracted to be conveyed shall revert to and invest in said first party, without any declaration of forfeiture, or any other act of said first party to be performed, and without any right of said second party of reclamation or compensation for moneys paid or services performed, as absolutely, fully, and perfectly as if this contract had never been made.

The paragraph relieving the company from liability on

account of shortage of water is worthy of careful study. Rights are sold on the basis of the *estimated capacity* of the works, and the contracts usually provide that the company will not sell rights to more than this estimated capacity. But there is no guarantee that the capacity will not be overestimated; in fact, the capacity of most canals is overestimated. If the capacity of a canal is over-estimated and the company sells rights up to its estimates, the water-right holders never will receive the volume agreed upon, but the company will divide what it has among them. If the supply is less than their estimate for any other reason, the water will be divided in the same way. In view of the fact, just stated, that the capacity of most canals is overestimated, and of the additional fact that almost no canals carry their full capacity all the time, what the purchaser of a water right really buys is not a right to a fixed volume of water, but a right to a share of whatever water the canal furnishes, this share never to exceed the volume agreed to be delivered. Among the causes of shortage enumerated is the use of the water of the stream by those having prior rights thereto. Thus a company may build a canal tapping a stream which is already greatly overappropriated, from which it can obtain no water, sell rights up to its estimated capacity, and still be relieved by its contract from any liability to the purchasers of water rights. One of the largest canals in Colorado is in just this position. The canal was built, rights were sold, homes were established, and water was supplied sometimes; but for two years the canal has furnished no water to those having rights under it, not because there is no water in the stream, but because the water is taken by those having prior rights to it. The danger in this provision lies in the fact that farmers not familiar with irrigation affairs can be so easily misled. They can see the canal, and the river flowing by full of water, and, not knowing anything about the necessity of letting this water go to the earlier canals, and having no means of finding out either the volume carried by the stream or the volume necessary to supply the prior rights, even if they do know about it, they are more or less at the mercy of promoters. This last statement applies equally to many investors in the

stock of irrigation companies. They, equally with the farmers under canals heading in large streams, but built too late to obtain water at any but extreme flood stages, have been the victims of the ignorance or dishonesty of promoters. It is expected by both the farmers and the investors that the deferred payments on the water rights and the annual assessments for ditch maintenance will be made from the returns from crops raised by use of the water supplied. If the canal does not furnish the water, these payments cannot be made, and both the farmer and the investor lose, the farmer losing his living and all he has paid in, and the investor losing that part of his investment which has not been repaid by the payments already made, unless he can secure another purchaser for the water right which has come back to his hands. But the fact that the company has just foreclosed on one set of purchasers is not much of an inducement for others to buy.

Some companies of this kind secure title to the lands to be served by their canals, and then sell land and water rights together. In such cases the deferred payments are usually made a lien on the land as well as on the water right, and then a failure of the water supply means to the farmer more than in the other cases, and to the company less, since the company regains its land. Commander Booth-Tucker of the Salvation Army, in a recent newspaper, is reported to have spoken of these companies as follows :

I believe in farming by irrigation. I know the power of irrigation, but I also know its dangers. An irrigation company can destroy a settler in two or three days, if it chooses. It can sell him the land, give him plenty of water for two or three years, till he gets it well improved. Then at the critical moment it can withhold the water for a few days, destroy his crops for that season, and ruin him. He is unable to meet his payments. The company takes his land, rendered more valuable by the improvements he has put on it, sells it over again, and makes money by the transaction. I am sorry to say that is being done all the time.

There is no way of finding out how much of such work as that just described is being done, but it is possible, and that some is done is probable. It is, of course, necessary that investors shall be amply secured for the capital put into irrigation works, but in

making contracts so much in their own favor, they have, it seems, overdone the matter, for these companies have been financial failures, with almost no exceptions. Farmers have hesitated to enter into such contracts, so that many companies have never sold enough rights to repay the cost of construction if the payments were all made, and under many others payments have not been made because water was not supplied. Some such companies have operated their canals at a loss for years, while the farmers under them have prospered; but the fact remains that these farmers are at the mercy of the companies, who need only neglect their canals to have them become almost useless, or cease to defend their rights in the courts, and in that way allow their customers to be ruined.

A number of states have passed laws prohibiting the sale of water rights, and compelling irrigation companies to furnish water to any lands lying under their canals so long as their supply lasts, giving preference to those who have previously received water from them. The Idaho statute, after stating the duty of companies to furnish water on proper application, is as follows :

But no demand for the purchase of a so-called perpetual water right, or any contract fixing the annual charges or the quantity of water to be used per acre, shall be imposed as a condition precedent to the delivery of water annually as provided in this act.

The passage of such laws as the above places irrigation companies in much the same position as city water companies. They build works on the prospects of a demand for water rather than under contracts to supply it. Superficially this does not seem to be so inviting a plan for the investor as the old one, but in practice it is better, because it recognizes the rights of the farmers, and, as pointed out above, the water company is dependent upon the prosperity of the farmers.

II. COMPANIES SELLING WATER RIGHTS, WITH AGREEMENTS TO DEED THE WORKS TO HOLDERS OF RIGHTS.

These companies are in general like those just described, except for the provision for turning the works over to the purchasers of rights. The purchase price of the rights is expected to

pay for the works with a profit, and the annual assessments pay the cost of maintenance and operation so long as the construction company retains the works. The following paragraph, taken from the contract issued by a Colorado company, is typical of those of the class under discussion :

It is hereby further agreed that, when said first party shall have sold and have outstanding and in force a number of water rights equal to the estimated capacity of the company's ditch to furnish water, and said water rights shall have been paid for, together with interest thereon in full, then the owners of said water rights shall become entitled to be the owners of first party's ditch, and the title to said ditch shall pass to said owners of water rights at the time and on the plan following.

The plan outlined is for the company to appoint a certain number of the holders of rights to file articles of incorporation for a new company and act as directors for the first year. The directors are to organize the new company, make by-laws, and issue to each water-right holder stock in the new company in the proportion that the number of water rights each has bears to the whole number of water rights sold. These new companies are usually of the co-operative type discussed later.

This is in general the plan contemplated by the act of Congress providing for government construction of irrigation works. Section 6 of that act is in part as follows :

Provided, that when the payments required by this act are made for the major portion of the lands irrigated from the waters of any of the works herein provided for, then the management and operation of such irrigation works shall pass to the owners of the lands irrigated thereby, to be maintained at their expense under such form of organization and under such rules and regulations as may be acceptable to the Secretary of the Interior. Provided, that the title to and the management and operation of the reservoirs, and the works necessary for their protection and operation, shall remain in the Government until otherwise provided by Congress.

It will be seen from the above that there is the general intention of turning the works over to the farmers, but no guaranty of its being done; in fact, the ownership will remain in the government "until otherwise provided by Congress." Until Congress shall provide otherwise, the government is in the position of the old water-right companies. Press reports state that

where water from government works is to be used on lands already in private ownership, the government will require the owners to give mortgages on their lands, securing the deferred payments on the water rights, in addition to the requirement stated in sec. 5 of the law :

The annual instalments shall be paid to the receiver of the local land office of the district in which the land is situated, and a failure to make any two payments when due shall render the entry subject to cancellation, with the forfeiture of all rights under this act, as well as of any moneys already paid thereon.

III. COMPANIES WHICH SELL WATER.

These companies have been referred to in the discussion of water-right companies, and need no extended notice. They are organized as any other business corporation. Most of the states have laws empowering the county commissioners to fix the rates to be charged by such companies for delivering water in case of disagreement, but providing that these rates shall be high enough to bring a reasonable return on the capital invested in the works and pay the expenses of operation. In California the question of rates has caused a good deal of litigation, the county supervisors fixing rates, and the water companies going to court on the plea of the rates not being reasonable, and not yielding a reasonable return on the investment. Some of the California canals were built in boom times, when prices of materials and labor were high. Since then prices have declined and the works have run down, and the question has been raised whether rates should be based on the original cost, on the present cost of duplication, or on the present valuation of the works. This question has not been finally settled, but is referred to here simply to show that even the matter of fixing rates is more or less complicated. The real problem of fixing rates, however, is not figuring out a just basis for rates, but of establishing rates which settlers will be willing to pay and will be able to pay. Too high rates will keep the settlers away, and will ruin those already on the ground; and companies have been obliged to fix rates on the basis of getting and keeping rate payers, rather than on the basis of a reasonable return on the investment. In the nature of

things, irrigation works must be built before the land is settled, and this land will not be settled all at once. Several years will pass, during which there will be but few persons taking water from a canal, and these few cannot pay interest on the cost of works to supply a much larger number of farmers, and the canal must be run at a loss in the meantime. If no mistakes are made in estimating the capacity of the works built and the area which can be served by them, or in the available water supply, when all the water is taken the cost of the works may be taken as a basis for fixing rates, but not before. Up to that time the ability and willingness of the farmer to pay rates must be the basis.

In the fixing of rates by the county officers the farmers have a great advantage, since they elect the board which fixes the rates.

IV. CO-OPERATIVE COMPANIES.

These are usually stock companies, the stock being chiefly owned by the water users, and being issued in payment for work in building the canals, as well as for cash. Subscriptions to stock are not generally limited to the owners of lands under the canals, but may be made by outsiders. Stock is not attached to any land and may be transferred freely. The ownership of a share of stock in such a company entitles its holder to a share of whatever water the canal furnishes, and to a vote in the management of the company. No water is sold by the company, and there is consequently no income. A person who owns stock in a canal, but no land under it, must, therefore, rent his stock to someone else in order to derive any income from it. The greatest expense in the construction of moderate-sized canals is for labor, but there must be some money used, and in many cases this has been provided by the sale of a limited amount of stock to outsiders. In Utah the Mormon church has sometimes aided in the construction of canals in this way. The people do the work, the church supplies the necessary money and receives stock of the company, which is later sold to newcomers or rented to those who need more water than is supplied on their own stock.

The stockholders of such a company meet annually or bien-

nially and elect a board of directors which transacts the business of the company, and a superintendent who has immediate charge of the works and of the division of the water among the stockholders. The stockholders in their annual meetings adopt rules governing the works and the use of water, and vote the assessments for maintenance and operation. These assessments are just large enough to cover expenses, and are based on the stock owned rather than the area irrigated or the quantity of water used. They are usually paid principally in work in cleaning and repairing the canal, some companies specifying each year what proportion must be paid in cash.

So long as the stock remains in the hands of the water users this form of organization is ideal. The farmers make their own rules, elect their own officers to enforce them, and vote their own assessments to pay the expenses of running the system. It is to their advantage to keep the works in first-class shape, or the water supply will be reduced; but there will be no extravagance in this line, since the farmers themselves pay the bills. There are no profits to pay, so there is no hard feeling on the ground that someone else is getting the best of the bargain. But there is danger in the sale of stocks to outsiders, since a majority of the stock may get into the hands of such parties, and then the outsiders rather than the farmers will elect the directors, make the rules, and vote the assessments, and farmers renting stock and those owning stock and using their own water will be subject to rules which may be changed at any time without their consent. They would then be in a worse situation than those who are receiving water under a contract which strictly defines the rights and duties of both parties. The company would then be something like a company organized for the sale of water, with this exception: the company would sell no water, but each shareholder would rent his stock. This would amount to a sale of water, but would raise no question of fixing rates. There would be no necessary uniformity in rates, each stockholder getting what he could for his share.

In this country there has been no tendency for the stock of such companies to accumulate in the hands of anyone except the

farmers. The writer made inquiries on this subject in the Jordan valley in Utah, with the following result: The East Jordan Canal Co. has one shareholder for each 6.5 acres of land watered; the South Jordan Canal Co. has one shareholder for each 13.85 acres; and the North Jordan Irrigation Co. has a shareholder for each 26.25 acres. The secretary of one of these companies said that the tendency was rather the other way; to aid in the building of these canals stock was sold to parties who have since been selling it to farmers in small lots. Spanish experience has not been so favorable. There irrigation works have been built on this plan, and the stock is largely owned by parties who sell their share of water rather than use it. There the water is sold to the highest bidder at public auction, the price rising with the urgency of the need for water, so that in seasons of scarcity farmers must either pay ruinous prices or lose their crops. In wet seasons the water owners are the losers.¹ There is, of course, the possibility of the same thing happening in this country. To prevent this it is proposed to attach rights to the land. That is, the owner of land could subscribe for stock and receive water to irrigate that particular tract of land and no other. All subsequent transfers of the land would include the canal stock, and the stock could not be transferred without the land. Such rules, if enforced, would prevent the stock getting into the hands of any but landowners, but they have certain drawbacks, chief among which is the influence on the economical use of water. Under the present system the farmer gets a certain portion of the water furnished by the canal. He can use that water on any lands and on any area of land that he chooses. It very often happens that the land first farmed under a canal becomes swamped or injured in other ways, and is therefore much inferior to other lands under the same canal, but with the water right attached to the land the farmer cannot transfer it to better land, but must continue using it on the original tract or lose it altogether. It may be that using the water on the inferior tract is more profitable than giving up his water right, but

¹ JEAN BRUNHES, *L'irrigation dans la péninsule ibérique et dans l'Afrique du Nord* (Paris, 1902).

much less profitable than using it on another tract would be. Again, new land requires more water than land which has been watered for a number of years. If a farmer buys stock enough to give him the water he needs at the beginning, in a few years he will have more than he can use to good advantage on the same land. Careful cultivation also reduces the water requirements of lands. If the farmer is free to use his share of the water supply on any land that can be reached by the canal, there is every inducement for him to use it on the most productive land, and on the greatest possible area of land, and to use every means of making the best possible use of his supply. His water will cost him just the same whether he raises a crop worth a hundred dollars or one worth a thousand, or uses his water on ten acres of ground or on a hundred acres. With rights attached to the land there is little incentive to economy of water, since it can be used on no other land than that to which it is attached, and if it is not used there it must go to waste, so far as the owner of the stock is concerned. It would undoubtedly be used by someone, but the point is that the person entitled to it would not economize in its use for the sake of seeing it flow on to someone else. As was stated, no trouble has yet come from the sale and rental of stock, and it is the writer's belief that the best results will come from continuing the present system.

This form of organization is not fitted for the reclamation of new lands, because such lands cannot be settled until the irrigation works are provided, and till the lands are settled there is no one to form the co-operative company. Lands are settled gradually, and if a stock company was organized and stock issued to settlers as they came, they would be at the mercy of the company until such time as the majority of the stock was in the hands of the settlers, when the tables would be turned. In such cases a contract fixing the relations between the company and the settler, and providing for turning over the works to the settler, would be preferable to the issuing of stock in the company at the time of settlement.

V. IRRIGATION DISTRICTS.

Irrigation districts are organized under laws prescribing all the steps to be taken and defining the powers of the districts when organized. Their exact form in any state depends, therefore, on the law of that state, but the plan provided by the various states is essentially the same. The essential feature of all these laws is that the districts when organized shall have power to issue bonds to raise money to build or buy works, and the power to levy taxes to pay these bonds. In order to give the bonds standing in the market the districts are organized under public supervision, and the taxes are collected by public officials. The Colorado district law is the most recent, and the plan of organization outlined by it is as follows:

A petition for the organization of a district must be presented to the county commissioners. This petition must give the boundaries of the proposed district, and must be signed by a majority of the "resident freeholders who are qualified electors of the proposed district, who shall also own a majority of the whole number of acres belonging to the resident electors of the proposed district." The time of hearing this petition must be advertised, and the board must hear objections to the organization or to the boundaries of the proposed district, and the boundaries may be changed by the board, but no land susceptible of irrigation from the proposed works may be excluded, and none included which cannot be served. Having fixed the boundaries, the board shall call an election, at which the question of the organization of the district shall be decided, and three directors shall be elected. The law defines the procedure in all details. If "a majority of all the resident freeholders who are legal electors in said district and have paid a property tax in the year last preceding" vote in favor of the organization of the district, the board shall declare it organized, and the officers elected shall immediately enter upon their duties; but no person is entitled to vote who is not a qualified elector and the owner of real estate in the district. The board elects a president from its own number and appoints a secretary. The board has power to transact business, buy property or water rights, make contracts for work, and make rules

for the operation of the works. Contracts involving the expenditure of from \$10,000 to \$25,000 must be ratified in writing by not less than one-third of the qualified electors of the district, and those over \$25,000 must be authorized by an election regularly held.

On entering upon its duties the board estimates the amount of money necessary to build or buy works, and calls a special election to vote on the question of issuing bonds to secure this money, but the amount of the bonds cannot exceed the "actual estimated cost" of the works and water rights. The bonds are to be made payable in instalments, as follows: at the end of eleven years not less than 5 per cent., at the end of twelve years not less than 6 per cent., at the end of thirteen years not less than 7 per cent., at the end of fourteen years not less than 8 per cent., at the end of fifteen years not less than 9 per cent., at the end of sixteen years not less than 10 per cent., at the end of seventeen years not less than 11 per cent., at the end of eighteen years not less than 6 per cent., at the end of thirteen years not less than 15 per cent., and at the end of twenty years enough to pay off the bonds. Bonds running shorter time may be issued, on vote of the district. Bonds are to bear not to exceed 6 per cent. interest, and must not be sold for less than 95 per cent. of their face value. They may, however, be used for making purchases, so that the restriction as to price is null, since the prices paid could be raised in such a way as to amount to the sale of the bonds at a low figure.

Payments are to be met by annual assessments on the real estate of the district. The board of directors is to estimate the amount of money necessary to meet expenses and make payments on bonds, the county assessor is to assess the property, and the county commissioners determine the levy necessary to raise the amount. The county treasurer is *ex officio* treasurer of the district, taxes are collected in the same manner as county taxes, and the revenue laws of the state apply to these taxes, except as provided otherwise in the law. There are to be two funds: the general fund from which the ordinary expenses are to be paid, and the bond fund. Warrants of the district issued in payment

for work done or materials are receivable for payments to the general fund, and interest coupons and bonds overdue for payments to the bond fund.

The water furnished is to be divided among the landowners in proportion to the acres susceptible of irrigation last assessed to the owners for district purposes, "and the water right so apportioned shall attach to and follow the tract of land held in freehold to which it is so apportioned either under lease or sale." The district may sell or lease water to occupants of government or state lands, but the tolls charged shall not be less than twice the amount of the district tax for which the land would be liable as a freehold.

Land which cannot for any natural reason be irrigated from the works of any district shall in no case be held by any district or taxed for district purposes, and the owners of land within the boundaries of a district who do not wish their lands to be included may petition the directors to have it omitted. If no one objects and there are no outstanding bonds, and the directors deem best, they may omit such lands from the district. If bonds are outstanding, the written consent of the bondholders is necessary to the excluding of any lands, and if there is objection from members of the district, the matter is submitted to a vote.

The directors may initiate judicial proceedings to test the legality of the organization of the district or the issuance of bonds.

California, Idaho, Kansas, Nebraska, Nevada, Oregon, and Washington have laws similar in general to the Colorado law. This plan is not adapted to the building of works to reclaim a new section, for the reason that the land without the water is almost worthless, and is therefore not good security for the bonds issued, and the title to a good part is likely to be in the government or the state and the land exempt from taxation. The plan has been used in Idaho and other places, by farmers under canals which have not furnished a satisfactory supply, to buy in these canals and improve them. A Colorado example will make this plain. The High Line Canal near Denver has never furnished the farmers under it a satisfactory water supply. This canal was

built by a company which sold water rights, but has never been a success financially or agriculturally. It is now proposed by the farmers under this canal to form a district, buy the canal from the original company, and build reservoirs to increase their water supply. The land has a partial water supply, and is near a large city, so that it will be first-class security for the bonds issued in case the district is formed.

District laws in general have not been successful. So far as operation is concerned, the district is much the same as a co-operative company. The only advantage of the district over the co-operative company is that some parties can be forced into a district organization who might not be willing to go into a co-operative company. A vote of the freeholders within a proposed district determines the question of its organization, and the lands within the district susceptible of irrigation from the works become liable for the bonds issued, no matter if the owners of some tracts do object. While this is apparently an advantage, it has sometimes proved otherwise. Dissatisfied parties have resisted the organizations in every step, and have attacked the bonds after their issue, and have in that way given such securities a bad name, which is more disastrous with bonds than with individuals. The organization of districts and the levy and collection of taxes under public supervision are for the purpose of giving the bonds a good standing, and have no other advantage, and they have usually failed in that. A co-operative company, if properly incorporated, can sell its securities, making them a lien on the lands of the incorporators, and is not subject to the elaborate and expensive public supervision of the irrigation district, but can transact its business and hold its elections at meetings called for that purpose with little formality and expense. Neither is adapted to the construction of works for reclaiming new lands, as has been stated. This must be done by some form of investment company.

VI. COLONIZATION COMPANIES.

The immediate cause of the financial failure of irrigation companies in the past has been their inability to get settlers. The price of water rights has been from \$10 to \$20 per acre, although

not always made on an acreage basis. Farmers with means have not cared to pay this, and those without means could not. In addition to the charges for water rights, there are the expenses of clearing and leveling land, and making small ditches for applying the water, and also the expenses of transportation for the settler and his family from the old home to the new, and of living until a crop is raised. These expenses have shut out the real home-seeking class, or at least those who most need homes on the land—the poor of the cities, and those who have nothing but their willingness and ability to work. The secret of successful irrigation development seems to be in the direction of colonization companies which will build works, take the settlers to them, feed them till they raise a crop, and thus get the water supplied by their works to bringing in returns at once. This will not be philanthropy, but business. Naturally, such settlers can give no security for the repayment of the money spent in this way except to agree to live on the land and work it for a term of years, and give the company a share of the crop or make cash payments, conditioned upon the success of their crops. For such enterprises the form of the old contract company which turned the works over to the settlers upon the fulfilment of certain conditions seems to be well adapted. Until the expenditures are repaid by the settlers the relations between them and the company would be defined by the contract, and neither could take advantage of the other. By the time the payments had been made the settlers would have become familiar with irrigation practice and would be qualified to manage their own affairs, and a co-operative company could be organized.

Commander Booth-Tucker, in the interview referred to above, says it has cost the Salvation Army about \$500 per family to put settlers on their colony lands and keep them until they get a start. With few exceptions these colonists have made their payments to the army for their land and water, and repaid the money advanced, and have become self-supporting.

The Union Colony, at Greeley, Colo., is the classical example of colonization companies, but each member of that colony was obliged to have a certain amount of money. Several companies

have tried reclaiming lands and selling them on monthly payments. Such companies build works, prepare the lands for irrigation, and work them until such time as they will support the settler. In the meantime the intending settler is continuing his old work and making his monthly payments. Whenever he pleases he may move onto his land, and farm it himself. This plan, it is seen, also requires some capital in the hands of the settler. Co-operative colonization companies have also been tried with some success. A part of the members of such companies go onto the land and build the works, while the others remain at work and furnish the money necessary for the enterprise. All these plans, however, are beyond the reach of the people who need most to be helped. People who are making barely enough to keep alive, or are falling short of that and are receiving charity, can, if helped to the land and given a start, become self-supporting and useful citizens, and repay all the money advanced to put them on the land.

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